

Roy Luo

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EDUCATION

University of Waterloo

Statistics, Co-op

Sep 2023 – Apr 2027

Waterloo, Ontario

McMaster University

Mathematics and Statistics

Sep 2022 – Apr 2023

Hamilton, Ontario

TECHNICAL SKILLS

Programming Languages: Python, R, SQL, C

Tools: PowerBI, Excel, Word, Powerpoint, Git

Languages: English, Mandarin, French

EXPERIENCE

Risk Modelling Intern

Sep 2024 – Present

Alberta Investment Management Corporation

Toronto, ON

- Developed and improved on total fund credit risk models across a \$170B multi-asset portfolio consisting of 26 clients with a focus on fixed income, private credit and private equity investments.
- Improved and monitored reports that track counterparty exposure, credit VaR and FX exposure for \$20B+ in derivatives and structured products.
- Enhanced internal credit scoring frameworks and credit risk methodology and transitioned them to Blackrock's Aladdin risk management system, flagging and mitigating high-risk exposures worth \$100M+.

Investment Risk Intern

Jan 2024 – Apr 2024

Healthcare of Ontario Pension Plan

Toronto, ON

- Engineered a stress testing tool that evaluated the impact of real rate fluctuations on billions in both liabilities and fixed-income holdings using data from Snowflake, SAP HANA and SQL Server.
- Automated dynamic hedging calculations using Python, reducing manual processing time by 10 hours a week and delivering 100% reporting accuracy.
- Streamlined the process for generating liquidity risk reports using matplotlib, reducing the turnaround time by 33% and ensuring compliance with financial regulations.

Data Analyst Intern

May 2023 – Aug 2023

Precision Insight Consulting

Toronto, ON

- Imported equity/bond trades using built-in Simcorp Dimension tools, mapping them to transaction codes and performing instrument type validation with a 99.5% accuracy rate.
- Configured and managed batch jobs for data extraction, optimizing data handling and processing efficiency, saving 15 hours per month of manual work.
- Constructed reference files documenting daily CAD/USD settlements in Excel and NAV reconciliation reports in Python, reducing reporting errors by 100% and enhancing data accessibility and accuracy.

PROJECTS

League of Legends Churn Analysis | *Python, pandas, sklearn*

- Leveraged a REST API to collect extensive gameplay data, including match statistics and player attributes for over 1,000 new players.
- Implemented and optimized machine learning models, including logistic regression, decision tree, random forests, and neural networks, achieving up to 78% accuracy in predicting player retention.
- Engineered relevant features and applied dimensionality reduction techniques like principal component analysis (PCA) to extract important patterns and reduce data complexity, achieving up to 95.75% variance explained.

Live Bitcoin Orderbook Dashboard | *R, SQL Server, PowerBI*

- Developed an R script to extract, clean and reformat live orderbook data from a websocket feed transmitting 25000+ Bitcoin orders a minute.
- Uploaded and stored data in SQL Server, which was loaded into PowerBI using DirectQuery, resulting in a 50% reduction in dashboard loading time compared to traditional data loading methods.
- Maintained a near real-time cryptocurrency orderbook dashboard with a refresh rate of 1 second, displaying important metrics like mid-market rate, order prices, market depth, and bid-ask spread.